

AIR FORCE FELLOWS

AIR UNIVERSITY

THE JOINT CARGO AIRCRAFT
LEGISLATIVE ISSUES AND THE WAY AHEAD

by

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Preface

My fellowship with the Congressional Research Service (CRS), from August 2008 to May 2009, gave me an insider's view of how Congress stays informed on literally hundreds of issues, and also gave me new insight into how legislative work is accomplished. It came at a tumultuous time, between Presidential administrations and in the midst of real financial crises, all of which had significant effects on defense issues and the overall budget. The Joint Cargo Aircraft (JCA) was the first topic I researched for CRS and, after observing how it contained many of the tradeoffs that are involved in Congressional decision-making as well as its importance to the Air Force and Army, it became the topic for this research. While this paper makes some recommendations for Air Force actions regarding the program in the near future, I attempted to frame the issues and actions surrounding the JCA from a Congressional perspective.

I would like to thank Colonel Stephen Fisher for his help in refining this paper during a year which brought sometimes surprising changes to the JCA program. Additionally, I would like to thank Nate Lucas, Research Manager for the Defense Policy Section in CRS who allowed me time to work on this project in addition to encouraging my participation in the daily efforts by CRS to serve Congress, especially during a time of great transition. While my two advisors and some CRS colleagues have helped review this writing, any errors in style or substance are solely mine.

Abstract

The Joint Cargo Aircraft (JCA), a joint acquisition program between the Army and Air Force, has had an unusual history, and has been a prime example of how differently the Department of Defense (DoD) and the United States Congress view service roles and missions, acquisition processes, and proper organization of each military branch. As an introduction to this topic, this paper intends to describe briefly the basic JCA program, differences between Army and Air Force approaches to the mission, and applicable leadership guidance and scientific studies. The primary focus will be, however, to look at Congress' actions regarding this program, discuss the varied issues that are important to legislators when making funding decisions on JCA, and analyze how those decisions affect Air Force intra-theater airlift plans.

The recently released DoD Quadrennial Roles and Missions Review (QRMR) devoted a significant portion of the report to intra-theater airlift and the JCA. The Department of Defense decided the program would remain in both the Army and Air Force, with changes being made by each service to their concept of operations (CONOPS) to accommodate this joint mission. Without rehashing decades-old roles and mission debates about fixed-wing aircraft, done in great detail elsewhere¹, this study will discuss the QRMR decision, analyze several other issues important to legislators, outline potential Congressional actions on JCA, and recommend Air Force actions in response to sometimes-conflicting military and legislative program guidance.

Notes

¹ For a thorough look at the history of the roles and missions debate, see David E. Pollmiller, John B. Knowles, and Chris A. Comeau, *Enough Already: JCA belongs in the Air Force!*, Air University, Maxwell AFB, AL, January 22, 2008.

Chapter 1

Introduction

Logistics are a critical part of successful warfighting, especially the important task of putting needed supplies in the hands of troops in the midst of battle. Despite vast improvements in technology over the past few decades, and an entire combatant command devoted to the movement of personnel and supplies around the globe, there remains the challenge of pushing vital cargo from collection points to the edges of the battlefield, what the Army calls delivering over the “last tactical mile.” Recent operations in Iraq and Afghanistan stressed and sometimes overwhelmed Army cargo helicopters performing this task, and highlighted limitations in their small fleet of aging fixed-wing cargo aircraft. The Army’s push for a new fixed-wing airlifter to meet this need, and the path that the program has taken since then are the focus of this study.

The program, now known as the Joint Cargo Aircraft, has followed a somewhat tortured path and is now being procured by both the Army and Air Force. As the program has developed since 2005, Congressional actions regarding JCA have been unpredictable at best. This paper seeks to make recommendations on the way ahead for the Air Force regarding JCA, but will look at the program through a Congressional lens. Starting with a discussion about the program as it currently exists, it will then address the multiple studies that have sought to inform the decision process, how Congress has funded the program to date, and most importantly, what issues are

important to legislators who make the final decisions on defense programs. Finally, it will recommend what actions the Air Force should take regarding the overall JCA program.

During the most recent budget cycle, Air Force Special Operations Command (AFSOC) garnered approval to purchase a gunship version of the C-27J, the same aircraft selected for the JCA contract. Although there have been some discussions regarding allowing two of the first seven aircraft being delivered to the Army to be diverted for AFSOC use, this plan has not yet been approved by Congress and no new contracts have been announced.¹ As such, the discussion that follows will not address potential AFSOC C-27Js, focusing only on the current JCA program of record for the Army and Air Force, and the aircraft they have contracted to date.

Notes

¹ Daniel Wasserbly and Marcus Weisgerber, "Air Force to 'Borrow' Planes from Army's FY-09 C-27J Procurement," *Inside the Army*, December 8, 2008.

Chapter 2

JCA Program and Mission

Current Program

The JCA program is a joint effort (a merger of the Army Future Cargo Aircraft (FCA) and Air Force Light Cargo Aircraft (LCA) programs) to procure a commercial derivative aircraft for intra-theater airlift.¹ In 2007, a joint team selected the Alenia Aeronautica C-27J *Spartan* in an open competition, and subsequently awarded a contract to team leader L3 Communications for aircraft, engineering, test equipment and logistics support.²

The Army and Air Force each provide personnel to a joint program office with the Army serving as the lead, and the current acquisition program of record calls for a total of 78 aircraft. The Army, which took delivery of its first aircraft in late 2008, will eventually acquire 54 aircraft. The Air Force plans to acquire its first aircraft in FY 2012 with an eventual fleet of 24 aircraft. The aircraft are a common configuration and the services will share systems for operational testing, aircrew and maintenance training, and depot maintenance.

Applicable Doctrine

Joint Publication 3-17 addresses Air Mobility Operations and identifies five basic airlift missions; passenger and cargo movement, combat employment and sustainment, aeromedical evacuation (AE), special operations support, and operational support airlift (OSA).³ A JCA

Memorandum of Agreement (MOA) signed by both services when the program was merged, specifies that the Army JCA will operate under the OSA mission area, while Air Force JCA will fly all other defined missions within a Joint Operations Area (JOA).⁴ The definitions currently contained in joint doctrine are not a perfect fit for the JCA, and the different approaches to intra-theater airlift by each service are discussed below.

Army Intra-theater Airlift Requirements

Joint doctrine does allow each service component to maintain a small fleet of aircraft to meet service-specific needs.⁵ The MOA states the Army will use JCA for “direct support” of its ground operations by providing “on-demand transport of time-sensitive/mission-critical (TSMC) cargo and key personnel to forward-deployed Army units operating in a Joint Operations Area.” Although TSMC airlift is not specifically defined in joint doctrine, the Army primarily views JCA as on-call airlift directly tied to the tactical needs of ground commanders, sometimes referred to as transporting cargo the “last tactical mile.”⁶ In response to Congressional questions, the Army Vice Chief of Staff explained that this direct support mission was sufficiently different from what the Air Force provides that the Army required an organic aircraft to perform it.⁷

In 2005, the Army completed a proposal, validated by the Joint Requirements Oversight Council (JROC), that acknowledged their need for more airlift of time-critical cargo. By April 2007, updates to this JROC approval reflected a *joint* requirement for up to 78 aircraft now in use for the JCA program. In a study addressing airlift needs in the ongoing conflict in Iraq, Rand analysts essentially agreed with the Army approach, suggesting the optimal airlift fleet should be structured to meet “the most serious threats to vital national interest...and consist[s] of several types of aircraft” with a “variety of operational characteristics,” and should avoid specialization that “jeopardizes the ability of the overall force to perform its most critical missions.”⁸

Additionally, the Army views the C-27J as a direct replacement for its aging fleet of approximately 45 C-23 *Sherpa* aircraft and an improvement to its heavy lift CH-47 *Chinook* helicopters, which have encountered some difficulty in forward delivery to high-altitude battle zones like those in parts of Afghanistan.

Air Force Intra-theater Airlift Requirements

The Air Force, which is responsible for organizing, training, and equipping to perform airlift, views the JCA mission, including delivery of time-sensitive/mission-critical Army cargo, as its role. The MOA states the Air Force will use JCA to provide “general support” airlift for all users. Joint publications define this as “the airlift service provided on a common basis for all DoD agencies and, as authorized, for other agencies of the US Government” and assigns mission responsibility to U.S. Transportation Command.⁹ Under this construct, the Air Force allocates available aircraft to all users in accordance with a Joint Force Commander’s (JFC’s) priorities; the stated goal is efficient use of every aircraft for multiple tasks. In response to the same questions posed to the Army, the Air Force Vice Chief of Staff insisted that an Air Force JCA could provide general and direct support airlift, and do so more efficiently than the Army.¹⁰

The requirement for an Air Force C-27J fleet, however, is not as clear as the Army’s JROC ruling. In 2007, Rand conducted an Intra-theater Airlift Force Mix Analysis (IAFMA) for the Air Force to determine the optimum composition of the Air Force’s intra-theater airlift fleet. While most details were classified, the study determined that C-27s were an efficient complement to other intra-theater platforms, but were not as cost-effective as operating the same number of C-130J aircraft.¹¹ The Air Force requested further study on possible mission activity where the C-27 may be more cost-effective, as well as comparisons to precision airdrop systems and recapitalizing CH-47s and/or C-23s.¹² In addition, tactical airlift requirements are part of a

new Mobility Capabilities Requirements Study (MCRS-16), currently in progress and due for initial release in summer 2009.¹³

The difference between Army “direct support” and Air Force “general support” is fundamental to the overall roles and missions debate surrounding JCA. Additionally, the tactical airlift studies done by the Air Force play a large role in how Congress perceives the program. These legislative issues will be addressed more comprehensively following some further details regarding studies and guidance from military leadership that have affected the JCA program.

Notes

¹ A brief history of the development of the program is provided in Appendix A.

² Department of the Air Force, *FY2009 Budget Estimates*, RDT&E, Volume II, February 2008, <http://www.saffm.hq.af.mil/shared/media/document/AFD-080130-061.pdf>.

³ Joint Chiefs of Staff, *Joint Doctrine and Joint Tactics, Techniques, and Procedures for Air Mobility Operations*, Joint Publication 3-17, April 14, 2006, p. IV-4.

⁴ Gen. Richard A. Cody (USA) and Gen. John W. Corley (USAF), Memorandum of Agreement, “Way Ahead for the Convergence of the Army Future Cargo Aircraft (FCA) and the Air Force Light Cargo Aircraft (LCA) Programs,” June 20, 2006, hereafter JCA MOA.

⁵ Joint Chiefs of Staff, *DoD Dictionary of Military and Associated Terms*, Joint Publication 1-02, April 12, 2001, as amended through October 17, 2007, p. 488. For example, the Navy operates a small fleet of C-2 Greyhounds that transport passengers and supplies to and from aircraft carriers.

⁶ JCA MOA, pp. 2-3.

⁷ Letter from Richard A. Cody, US Army Vice Chief of Staff, to The Honorable Carl Levin, Chairman, Senate Armed Services Committee, October 11, 2007.

⁸ Robert C. Owen and Karl P. Mueller, *Airlift Capabilities for Future U.S. Counterinsurgency Operations*, RAND Corporation, 2007, pp. 35-39.

⁹ Joint Publication 1-02, p. 106.

¹⁰ Letter from Duncan J McNabb, US Air Force Vice Chief of Staff, to The Honorable Carl Levin, Chairman, Senate Armed Services Committee, October 18, 2007.

¹¹ Testimony of General Arthur Lichte, Commander, Air Mobility Command, US Congress, House Committee on Armed Services, Subcommittee on Air and Land Forces, *United States Transportation Command Posture and Air Force Mobility Aircraft Programs*, 110th Cong., 2nd sess., April 1, 2008, available at http://armedservices.house.gov/pdfs/AL040108/Lichte_Testimony040108.pdf.

¹² The follow-up study has been released to Congress, but results have not been made public. Background information and talking paper on USAF Intra-Theater Airlift Force Mix Analysis, obtained from HQ Air Mobility Command/A9, January, 2008.

¹³ This study is being conducted by the Pentagon’s Program Analysis and Evaluation Directorate in conjunction with United States Transportation Command.

Chapter 3

Studies and Guidance

Numerous studies since 1994 have attempted to establish the proper size and mix of aircraft fleets needed to meet the mobility requirements of US armed forces. Results from each study depend heavily on the assumptions made for force structure and the scenarios used to estimate needed airlift, and many of the studies do not address the time-sensitive “last tactical mile” mission envisioned for the JCA. This chapter will discuss airlift studies, some recent reports that address intra-theater airlift, as well as specific DoD guidance for the JCA which was recently released in the Quadrennial Roles and Missions Review.

Multiple Mobility Studies

In 1994, the Joint Staff published a Mobility Requirements Study (MRS-05), based on late-1990s force structure, that attempted to set the size of the airlift fleet. While it was primarily focused on strategic airlift, it did outline a rough size needed for the tactical airlift fleet of C-130s.¹ Building on these results, United States Transportation Command (USTRANSCOM) sponsored an Intra-theater Lift Analysis (ILA) focused on C-130s. Published in 2000, the study used missions identified in MRS-05 and, despite adding other global airlift missions not previously addressed, concluded that the fleet of C-130s (around 516) was larger than needed. After 9/11, a Pentagon-led study, the Mobility Capability Study (MCS) identified a range of tactical airlifters needed (395-674), the large difference stemming from uncertainty with airlift

roles in homeland defense and operations in new theaters. A pair of Joint Staff-led studies, the Joint Intra-theater Lift Capabilities Study (JITLCS) and the Joint Intra-theater Distribution Analysis (JITDA), completed in 2007, addressed the “last tactical mile”, but neither led to a fleet size recommendation for small airlifters like the JCA, instead pushing for further study of that particular mission. By this time, the merged JCA program was already underway, so Air Mobility Command (AMC), the Air Force organization who will operate the JCA, sponsored a study (performed by RAND) specifically aimed at identifying the proper mix and potential recapitalization of the airlift fleet.

USAF Intra-theater Airlift Fleet Mix Analysis

The study, the USAF Intra-theater Airlift Fleet Mix Analysis (IAFMA), based on the lower end of the range of tactical airlifters from MCS, was done in part to analyze what kind of recapitalization would be needed in case of the grounding or retirement of the oldest “E” model C-130s. The study did acknowledge a need for the planned 78 C-27Js for time-sensitive cargo, but concluded that it was more cost effective for those missions to be performed by the C-130J and therefore did not recommend any future purchases of the JCA.² The Air Force Vice Chief of Staff then requested an additional follow-up study for RAND to look at other possible mission activities where the C-27J may be more cost effective. These missions included recapitalization of Operational Support Aircraft (OSA) inventories, Joint Precision Aerial Delivery System (JPADS) operations, delivery of Special Operations Forces teams, Air National Guard support of Federal Emergency Management Agency (FEMA) regions, and building international partnerships around a common airframe.³ The study results were not published as of this writing, but have been rumored to have found some areas where the JCA is more cost effective.

Size and Mix of Airlift Force Study

Congress, with language placed in the 2008 National Defense Authorization Act, required the DoD to carry out a separate and extensive airlift requirements study and report the results by January 2009.⁴ Among numerous requirements for the study was an analysis of the use of inter-theater aircraft for intra-theater roles, as well as an assessment of the life-cycle costs of all airlift platforms, including the C-27J. USTRANSCOM, the lead on the study, contracted with the Institute of Defense Analysis (IDA) as required by the legislation. A draft of the IDA study audited by the Government Accountability Office (GAO) in 2008 was critical of the lack of detail involved and stated that the final report may not have sufficient analysis done to be informative to Congress.⁵ Unclassified results on the study have not yet been published, but have been provided to Congress, and reports indicate that the study found, under certain parameters, that the C-27J would be more cost-effective than the C-130J.⁶

Mobility Capabilities Requirements Study

Intra-theater airlift decisions will also likely be affected by the ongoing Mobility Capabilities Requirements Study (MCRS-16), due to release preliminary results in the summer of 2009, with a final report by the end of this year. Led by DoD and USTRANSCOM, it is the largest comprehensive mobility study ever conducted and will recommend investment decisions on all airlift platforms and missions.⁷ It is unclear what effect the MCRS-16 study will have on the JCA, and the multiple issues involved may be further complicated by rapidly changing defense budgets from a new Presidential administration, as well as an accelerated Quadrennial Defense Review (QDR) that is intended to describe US force structure and potential threat scenarios on which much airlift analysis is based. AMC Commander, General Arthur Lichte, stated recently that "...it [the C-27] is not going to score very well because in every scenario it's

cheaper to use the C-130J...but there is a need, and the latest study” validated the JCA requirement.⁸

Quadrennial Roles and Mission Review

The most definitive DoD guidance on the JCA program to date has come from the Quadrennial Roles and Missions Review (QRMR). Also set by Congressional language in the 2008 defense authorization, DoD was required to identify core mission areas and competencies for each service, and to review roles and missions associated with some specific focus areas, one of which was intra-theater airlift. DoD acknowledged again the Army’s requirement for delivery of time-sensitive/mission-critical (TSMC) cargo and set out an accepted but rather long definition for the term.⁹

More importantly for the services, the QRMR maintained the status quo with regard to intra-theater airlift roles and missions. DoD evaluated four different options for assignment of the mission and found “...the option that provided the most value to the joint force was to assign the C-27J to the Air Force and the Army.”¹⁰ The QRMR then directed changes to each service’s CONOPS to accommodate the compromise as well as updates to joint doctrine to include this new construct. The compromise for the Air Force will primarily be adjustments to ensure that they can fly “direct support” missions when requested by the Army, which could include operating under tactical control (TACON) of Army commanders. Conversely, the Army will have to ensure that its C-27s will be able to fill “general support” missions tasked by an overall air component commander when available, including compatibility with command and control systems that allow visibility of the mission by an overall airlift commander.

Air Force Chief of Staff General Norton Schwartz stated that the Air Force will not push further to claim the entire JCA mission from the Army and that “...I think the issues related to

lift and particularly the C-27 have been resolved, certainly to my satisfaction.”¹¹ Legislators may not agree as readily. Congressman Ike Skelton, who originally directed the QRMR review, noted that “...the report makes only a small contribution to the difficult task of challenging the allocation of treasured turf and changing deeply held cultures within the Department.”¹²

Notes

¹ Information in this section on mobility studies and results comes primarily from interviews and background information obtained from HQ Air Mobility Command/A9.

² Testimony of General Arthur Lichte, Commander, Air Mobility Command, US Congress, House Committee on Armed Services, Subcommittee on Air and Land Forces, *United States Transportation Command Posture and Air Force Mobility Aircraft Programs*, 110th Cong., 2nd sess., April 1, 2008, available at http://armedservices.house.gov/pdfs/AL040108/Lichte_Testimony040108.pdf.

³ Ibid.

⁴ US House, Committee on Armed Services, *National Defense Authorization Act for Fiscal Year 2008*, Conference Report to Accompany H.R. 1585, 110th Cong., 1st sess., December 6, 2007, H. Rept. 110-477 (Washington: GPO, 2007), pp. 313-316.

⁵ US Government Accountability Office, *Defense Transportation: DOD Should Ensure that the Final Size and Mix of Airlift Force Study Plan Includes Sufficient Detail to Meet the Terms of the Law and Inform Decision Makers*, GAO-08-704R, April 28, 2008, available at <http://www.gao.gov/new.items/d08704r.pdf>.

⁶ Marcus Weisgerber, "Report: Retiring Air Force C-5s to Buy More C-17s Not Cost-Effective," *Inside the Air Force*, April 17, 2009.

⁷ Mike Williams, Executive Director of the U.S. Transportation Command Joint Distribution Process Analysis Center quoted in Jason Sherman, "Mobility Assessment to Review Possible New Airlift Requirements," *Inside the Air Force*, December 26, 2008.

⁸ Marcus Weisgerber, "Lichte: Major Mobility Study Will Not Favor Small C-27-like Aircraft," *Inside the Air Force*, March 6, 2009.

⁹ TSMC requirements, with several caveats, are defined as cargo and personnel movements that cannot routinely be accommodated via planned resupply processes where efficiency is the primary consideration. See Department of Defense, *Quadrennial Roles and Missions Review Report*, Washington, DC, January 2009, p. 38, available at http://www.defenselink.mil/news/Jan2009/QRMRFinalReport_v26Jan.pdf, hereafter QRMR.

¹⁰ Ibid, p.22.

¹¹ John A. Tirpak, "CSAF Seeks a Different Course," *Air Force Magazine*, February 2009, pp. 6-7.

¹² Katherine McIntire Peters, "Report: U.S. Needs to Balance Military Force, 'Soft' Power," *Government Executive.com*, January 29, 2009, available at <http://www.govexec.com/dailyfed/0109/012909kp1.htm>.

Chapter 4

Legislative Actions

Congressional action on the Joint Cargo Aircraft began in 2005, during work on the FY 2006 defense budget, and support for the program and opinions on which service should operate it have varied widely since. Presidential Budget requests for the JCA and the eventual amounts authorized and appropriated by Congress each year since are shown in Table 2. In 2005, the first request, only in the Army budget at the time, was \$4.9 million for lead procurement, and both authorizers and appropriators fully supported the request.¹

The following year, the President requested \$109.2 million for Army procurement (3 Future Cargo Aircraft) and \$15.8 million for Air Force advance procurement of the Light Cargo Aircraft. During budget deliberations, DoD merged the programs into the JCA, and based on uncertainties surrounding the proper amount of aircraft to procure, authorizers transferred all funding to the Air Force's account pending the outcome of multiple ongoing airlift studies.² Appropriators allowed procurement funding to remain with the Army (but cut it to \$72.2 million) and transferred Air Force procurement money into the Air Force's Research, Development, Test, and Evaluation (RDT&E) account.³ Concurring with comments made in the FY 2007 Authorization Bill, Senate appropriators demanded additional analyses of intra-theater airlift requirements be completed before any procurement could begin.⁴

For FY 2008, the President requested \$157 million for Army procurement and \$42.4 million for Air Force RDT&E. House authorizers supported the request but again stipulated that DoD could not obligate funds until studies (the JITLCS and JITDA mentioned above) and requirements analysis were complete.⁵ Senate authorizers also supported the funding request, but weighed in with their belief that the entire mission should be flown by the Air Force, and accordingly recommended transferring all procurement funds to the Air Force. The Senate Armed Services Committee language explicitly questioned the Army's need for their own fixed-wing airlift fleet, stating

If there were a pattern of the joint forces air component commander (JFACC) providing support that did not match the priorities of the joint forces land component commander (JFLCC), that would certainly argue for intervention of the joint forces commander to correct the situation. It would not be a persuasive argument that the JFLCC should have his own air force.⁶

The FY 2008 Defense Authorization Act, however, restored the Army procurement funds, directing instead that DoD conduct a full roles and missions review to address the matter.⁷ Appropriators supported the President's procurement request, but did cut \$21.3 million from Air Force RDT&E as an "unjustified request".⁸

Last year, the President requested \$264.2 million to procure seven C-27Js for the Army, \$5.4 million for lead procurement for the Air Force, \$3 million for Army RDT&E, and \$26.8 million for Air Force RDT&E. Although debate in 2007 had centered on whether the Army had a need to procure and fly a new fixed-wing aircraft, by 2008, the need for the Air Force to do so was in question. The FY 2009 Defense Authorization Act supported the Army portions of the request, but cut all of the advance procurement funds and \$10 million of RDT&E funds from the Air Force.⁹ House authorizers explained these cuts by pointing to the results of the aforementioned IAFMA (where C-130Js were shown to be more cost-effective than C-27Js) and questioned the lack of proper analysis done to justify any Air Force procurement of JCA.¹⁰ In the

final appropriation bill, Congress supported the Army funding while removing Air Force advance procurement funds and \$10 million in RDT&E money that was “unexecutable.”¹¹

Table I. Congressional Actions on the Joint Cargo Aircraft

(amounts in millions of dollars)

	President's Budget			Authorization			Appropriation			Comments	Public Law
	Procurement		R&D	Procurement		R&D	Procurement		R&D		
	#	\$	\$	#	\$	\$	#	\$	\$		
FY2006	--	4.9	--	--	4.9	--	--	4.9	--	Program was only Army Future Cargo Aircraft in this budget	109-148
FY2007	3	124.9	--	--	109.2	15.8	--	72.2	15.8	Congress cut some Army procurement funding as premature and moved all Air Force procurement money to R&D	109-289
FY2008	--	157.0	42.4	--	157.0	21.0	--	157.0	21.0	Congress cut some Air Force R&D funding as “unjustified”	110-116
FY2009	7	269.6	29.8	7	264.2	19.8	7	264.2	19.8	Congress cut all Air Force procurement and some R&D funding as “unexecutable”	110-329

Sources: All numbers and Congressional actions come from corresponding committee or conference reports published by Appropriations and Armed Services committees of each house; see endnotes this section.

Notes: Amounts reflect total funding for both Army and Air Force programs; see chapter text for breakouts. Public Laws are signed appropriations bills containing the indicated JCA appropriations.

Notes

¹ US House, Committee on Appropriations, *Making Appropriations for the Department of Defense for Fiscal Year 2006*, Conference Report to Accompany H.R. 2863, 109th Cong., 1st sess., December 18, 2005, H. Rept. 109-359 (Washington: GPO, 2005), p. 247.

² "Conference Report on H.R. 5122, John Warner National Defense Authorization Act for Fiscal year 2007," House Proceedings, *Congressional Record*, vol. 152, part 125 (September 29, 2006), p. H8283.

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¹⁰ US House, Committee on Armed Services, *Duncan Hunter National Defense Authorization Act for Fiscal Year 2009*, Report to Accompany H.R. 5658, 110th Cong., 2nd sess., May 16, 2008, H. Rept. 110-652 (Washington: GPO, 2008), pp. 226-227.

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Chapter 5

Legislative Issues

Congressional actions on the JCA, as with most defense programs, are judged primarily by how much money is devoted to the platform or mission in a given year's defense budget. The decisions behind these funding amounts, however, represent many constituencies and are informed by debate on numerous other issues. In addition to the mobility studies outlined earlier, this chapter will look at issues important to Congress regarding the JCA, some of the competing arguments involved, and possible legislative outcomes.

Fiscal Constraints

Not surprisingly, the biggest Congressional issue for the JCA program is the total cost. While the overall budget amount for procuring C-27s is modest in comparison with other major acquisition programs, the effects of the current economic slowdown and pressures on discretionary military spending all play a part in its funding. A new Presidential administration with new military priorities has already made significant changes to overall defense plans, and effects on the FY 2010 budget request for JCA are still unclear. Some JCA critics argue that DoD already has sufficient options for tactical airlift and suggest the Air Force could have a more versatile system by diverting funds planned for JCA into procuring larger tactical airlift models such as C-130s and C-17s, a view backed up by the IAFMA results.¹ A study by the Congressional Budget Office asserts that the Army's helicopter modernization program may

require a 50% larger budget between 2007-2030 as compared with 1986-2005, and suggested the Army could better use JCA dollars by instead modernizing its helicopter fleet.²

Congressional language also highlights that overall costs are important to lawmakers. In its report on the 2007 defense authorization bill, the House Armed Services Committee (HASC) agreed with the merger of the FCA and LCA, but stressed “...cost control is the most critical factor in determining the likelihood for success of the JCA program.”³ More recently, the 2009 HASC report criticized Army plans for using operations and maintenance (O&M) funds for purchasing JCA spares, support equipment, and simulators because those costs are harder to track, making it difficult to determine the true cost of each C-27J.⁴ As can be seen in the previous chapter, however, changes made in the administration’s budget request will not necessarily mean a change in how Congress funds the JCA program.

Roles and Missions

DoD Directive 5100.1 defines basic roles and missions, but is not definitive regarding airlift, giving all services the ability to field organic aircraft.⁵ Congress has members on all sides of the issue regarding splitting tactical airlift between the Army and Air Force. Historically, the Army has successfully argued for ownership of a small fleet of tactical airlifters. Field commanders often state they need the responsiveness that “direct support” airlift provides to counter unforeseen contingencies. Some critics characterize this approach as inefficiently creating “two air forces.” Others, however argue that the JCA simply maintains a status quo in roles and missions, i.e., “direct support” Army transport helicopters *already* perform TSMC movement of passengers and cargo and since the Army is responsible for sustaining its soldiers on the

battlefield, it should be able to procure and use the most efficient vehicles (truck, helicopter, or fixed-wing aircraft) to perform this task.

The crux of the roles and missions debate, however, is command and control of these aircraft. Advocates of placing all C-27s in the Air Force point out that presently a Joint Force Commander (JFC) can apportion tactical airlift into a “direct support” role whenever it is needed. The Air Force has an extensive command and control architecture already established for the air mobility mission in any theater. *Centralized control* of all air assets is the primary tenet of this construct. Army commanders, however, normally function in an environment of *decentralized control* that would allow them to instantly task their own assets, but may leave the aircraft idle when not needed. The Army proposes that its aircraft will be available to the common-user airlift pool when not needed in a “direct support” role—this availability is now *directed* by the QRMR report—but it is not clear that the Army is committed to obtaining the necessary command and control systems needed to ensure the aircraft are both visible and usable by the JFC. Conversely, some support the Army’s JCA program because they question the Air Force’s long-term commitment to the “direct support” role, pointing out the Air Force has retired its last four small tactical airlift aircraft without replacement.

The roles and missions debate has elicited strong reactions from service leadership in the past. Army Secretary Pete Geren said in 2007, “the last tactical mile is an Army mission; it’s not an Air Force mission, and we feel it’s important that we control the decision-making and the assets for that.”⁶ Earlier in the debate, Air Force Chief of Staff General John Jumper replied to a reporter’s FCA question by saying “...you don’t need to go out and buy yourself an Air Force—we’ve got one.”⁷ When asked about his preference in the JCA debate, Air Force General Norton Schwartz, then Commander of U.S. Transportation Command, questioned whether the Air Force

was willing to fully support the Army in the manner they desired, asking “...is the Air Force willing to attach tactical airlifters to an Army brigade commander when required?”⁸ It appears the issue is far from settled in Congress as well, as evidenced by legislative direction in 2007 to include intra-theater airlift in the QRMR report and Congressman Skelton’s skepticism of the overall QRMR results expressed earlier.

National Guard

The National Guard, both Army and Air Force, is vitally important to many members of Congress, and Guard missions are definitely an element of legislative JCA decisions. The Army National Guard operates their aging *Sherpa* aircraft in 18 different states and plans to replace the missions in many of those units with C-27s.⁹ Similarly, the Air National Guard has plans to assign C-27s to units in at least six different states.¹⁰ Former Chief of the National Guard Bureau, Lieutenant General Steven Blum, stated in 2006 that the JCA was “absolutely necessary” for Guard success and emphasized its utility in aiding FEMA operations like those supporting Hurricane Katrina relief.¹¹

Although the Guard Bureau as a whole supports the procurement of the JCA, different service approaches appear here as well. In response to questions posed by Senator Carl Levin, General Richard Cody, Army Vice Chief of Staff, argued that JCA was much better suited for the Army National Guard as they are more focused on state missions, while the Air National Guard was more “federal.”¹² The Air Force, in response to the same questions, disagreed, stating that Guard units activated for state missions would operate the JCA in the same manner regardless of service.¹³ In any case, with the plans stated above now in place for C-27J Guard assignments, any decision by Congress to alter either the number or balance of aircraft to each service will likely face significant resistance from legislators in the affected states.

Building Partnership Capacity

While some in Congress will focus mostly on domestic issues when addressing the JCA, those who look towards military cooperation overseas and coalition building may be inclined to increase the Air Force portion of JCA procurement. Building partnership capacity (BPC) has become a major part of Air Force strategy and is likely to play an even bigger role as the United States Africa Command expands its involvement across the continent.¹⁴ Interoperability with airlift systems in other countries can help in many aspects of fighting the terror war, including obtaining basing and overflight rights, and opening diplomatic avenues that might otherwise stay closed.

The Air Force considers platforms like the C-27J important to BPC efforts, and its acquisition would allow the service to join other countries that have ordered or already operate the *Spartan*, including Bulgaria, Italy, Lithuania, Morocco, Greece, and Romania.¹⁵ The US government has also offered the aircraft for sale through the Foreign Military Sales (FMS) program, with potential customers in Australia, Taiwan, Qatar, and Ghana that may want aircraft with capabilities only available through FMS.¹⁶ Several others—like Nigeria, Thailand, and Argentina—fly an older version of the aircraft, the G222 (also known as the C-27A), and Alenia North America announced late last year that it was contracted to provide 18 refurbished C-27As to the fledgling Afghan Air Corps in Kabul.¹⁷

Industrial Base

A robust aircraft industry is important to many in Congress, and in the current economic environment, job creation and losses play an important part in legislative decisions. While the first 13 C-27Js ordered will be built in Italy, Alenia Aeronautica signed an agreement last year to build a final-assembly plant in Jacksonville, Florida that it states will be operational for the 14th

aircraft and beyond.¹⁸ Florida estimates the plant will bring 300 jobs to the local area and over \$100 million in capital investment to the county.¹⁹ While the program is small compared to multi-state programs like the C-17 or F-22, the prospect of American jobs in the balance will also have an impact on Congressional discussions surrounding the JCA program.

As FY 2010 budget discussions and legislative work begin in earnest, Congress may take one of several actions regarding the JCA program. With an established TSMC requirement in place and tacit commitments to place aircraft in the National Guard, cancelling the program altogether seems unlikely. In that case, although funding levels could vary widely compared to past years, Congress could choose one of three basic paths; either move the mission entirely to the Army, entirely to the Air Force, or agree with the DoD position—outlined in the QRMR review—to leave the program as it is, with both services completing the acquisition process and operating the C-27J in their own units. Which choice is likely? And what should the Air Force do in response?

Notes

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² Congressional Budget Office, *Modernizing the Army's Rotary-Wing Aviation Fleet*, Publication No. 2898, Washington, DC, November 2007, available at <http://www.cbo.gov/ftpdocs/88xx/doc8865/11-30-Helicopters.pdf>.

³ US House, Committee on Armed Services, *National Defense Authorization Act for Fiscal Year 2007*, Report to Accompany H.R. 5122, 109th Cong., 2nd sess., May 5, 2006, H. Rept. 109-452 (Washington: GPO, 2006), p. 22.

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⁷ John T. Bennett, "USAF Chief: Small Fixed-Wing Aircraft Needed for Intra-Theater Lift," *Inside the Air Force*, September 2, 2005.

⁸ Air Force Association, *Not Our Way*, Daily Report Archive, December 7, 2007, available at [http://www.airforce-magazine.com/DRArchive/Pages/2007/December 2007/December 07 2007/1060way.aspx](http://www.airforce-magazine.com/DRArchive/Pages/2007/December%202007/December%2007/1060way.aspx).

⁹ National Guard Association of the United States, *Joint Cargo Aircraft*, Fact Sheet, October 11, 2007, available at <http://www.ngaus.org/NGAUS/files/ccLibraryFiles/Filename/000000003058/JCAFactSheet101107.doc>.

¹⁰ Sam LaGrone, "6 Guard Units Hoping for a Spartan Lift," *Air Force Times*, March 23, 2009, pp. 12-13.

¹¹ Michelle Tan, "Blum Reiterates Need for Joint Cargo Aircraft," *Air Force Times*, September 18, 2006.

¹² Letter from Richard A. Cody, US Army Vice Chief of Staff, to The Honorable Carl Levin, Chairman, Senate Armed Services Committee, October 11, 2007.

¹³ Letter from Duncan J McNabb, US Air Force Vice Chief of Staff, to The Honorable Carl Levin, Chairman, Senate Armed Services Committee, October 18, 2007.

¹⁴ Department of the Air Force, *Fiscal Year 2009 Air Force Posture Statement*, February 28, 2008, p.16, <http://www.posturestatement.af.mil/shared/media/document/AFD-080310-037.pdf>. BPC is also referenced in most communications from senior AF leadership, e.g., Michael B. Donley, "Transition," Keynote Address to the Airlift Tanker Association, November 7, 2008, available at <http://www.af.mil//shared/media/document/AFD-081114-025.pdf>.

¹⁵ Flightglobal, *World Air Forces Directory*, June 11, 2008, available at <http://www.flightglobal.com/assets/getasset.aspx?ItemID=26061> and Jane's, *All the World's Aircraft: Alenia C-27J Spartan*, February 9, 2009.

¹⁶ Tom Klinton, "Alenia Pushing Ahead on C-27J Plant in U.S.," *Defense News*, February 23, 2009, p.3.

¹⁷ John Reed, "Alenia North America Nets \$287 Million to Deliver 18 C-27As to Afghans," *Inside the Air Force*, October 3, 2008.

¹⁸ Klinton, p.2.

¹⁹ Florida Governor's Press Office, "Alenia North America Signs Commitment To Build Assembly Hub At Jacksonville's Cecil Commerce Center," press release, October 16, 2008, <http://www.flgov.com/release/10291>.

Chapter 6

Analysis and the Way Ahead

Experience shows that it can be difficult to predict Congressional budget actions. In the relatively short program history of the JCA, different constituencies in Congress have gone from fully funding the Army, to moving the entire budget to Air Force aircraft, and ending last year with a joint approach, although mostly favoring Army procurement. DoD has weighed in on the program in the QRMR review, but legislative actions don't always match DoD or individual service priorities, making JCA's future hard to gauge.

Based on the factors described above that influence legislators—among the most important being the established requirement for delivery of TSMC cargo, the assignment of the JCA to Guard units, and the QRMR decision to continue a joint program—it seems unlikely that Congress would move towards pushing the mission solely to one service. In the current environment of rapidly changing priorities between Presidential administrations, however, the Air Force should be prepared for any outcome. When looking at the same factors from an Air Force perspective, program costs in a fiscally-constrained budget and an ambiguous requirement for the C-27J outweigh the other issues with respect to future JCA decisions. The following are recommendations for the Air Force way ahead in response to possible JCA program outcomes in FY 2010 and beyond.

Recommendations

If JCA is moved completely to the Army

In this case, the Air Force should accept the decision and move ahead with plans to purchase more C-130Js, retire the oldest “E” models and modernize other models in the C-130 fleet. Air Force Chief of Staff General Norton Schwartz said recently he is not threatened by other services fielding airlifters and “...is less worried about ownership...than about end results.”¹ This likely reflects his strong joint background and previous job as a combatant commander, but fits just as well in the constrained financial situation the Air Force is in today.² With limited dollars to put against numerous important Air Force programs, and an indistinct mission requirement, JCA can be given up to the Army without a fight. While this decision would limit some of the partnership building efforts mentioned earlier, the most significant effect would be uncertainty for Air National Guard (ANG) units slated to receive the C-27J. While it is not clear what might replace them, General Schwartz acknowledged last year that this was possible and has pledged to help those units find a mission.³

If JCA remains a joint program

In this case, the Air Force should complete its program of record and stop at the current 24 aircraft. CONOPS changes directed in the QRMR review would be made that allow the service to carry out TSMC movement when needed in a particular theater; agreements that the Air Force has already made. Plans for assigning aircraft to ANG units would be preserved and some expertise in C-27J operations would be gained that might benefit BPC efforts in Africa and other theaters. Further funds available past the 24 aircraft agreed to, however, should be put towards other Air Force priorities and new TSMC initiatives as described below.

If JCA is moved completely to the Air Force

With aircraft having already been delivered to the Army, this option seems almost as unlikely as full cancellation, but the Air Force should still plan for it. In this case, if Congress fully funded the planned 78 aircraft (24 plus 54 originally planned for the Army), the Air Force would need to complete the total procurement program and would encounter many of the same implementation effects mentioned in the joint section. However, with such a major change to the direction given in the QRMR review, the way the JCA would operate in theater would likely gravitate towards the Air Force “general support” model, even with agreements now in place to support Army TSMC movement. If this option were chosen, the Air Force should give the entire TSMC mission a fresh look and investigate other ways to accomplish it without being tied to a particular platform.

While the Air Force has done some recent studies to find specific scenarios where a C-27J might be optimal, most of the work done has shown that the C-130J is more cost effective over a variety of mission areas.⁴ In his recent statements on the upcoming FY 2010 defense budget, Secretary of Defense Robert Gates discussed the importance of purchasing the right platforms for the complex “hybrid” warfare (both high-end and low-end threats) face by US forces today, and emphasized those that have value across multiple missions.⁵ Scarce budget dollars for the JCA program should therefore be spent on airlift platforms that are proven to be cost-effective for multiple mission areas. In cases where those platforms can’t properly support the Army’s TSMC needs, other options should be considered, including Joint Precision Aerial Delivery System (JPADS) and even unmanned systems. JPADS has already proven successful in theater and combines cargo platforms, steerable parachutes, and GPS receivers to enable airdrops from high (and relatively safe) altitudes, delivering supplies and vehicles with pinpoint accuracy and with no runway needed.⁶ With improving technology and ever-increasing military experience

with unmanned systems, an automated vertical-lift cargo carrier seems to be another ideal way to deliver TSMC cargo, and this option is being pursued this year by the Marine Corps for the same mission.⁷

Overall, regardless of how legislators and DoD eventually organize or fund the JCA program, fiscal constraints and the real requirement for this mission need to be the main drivers for Air Force decisions. The Air Force should focus less on the C-27J, continue to procure C-130Js and modernize other workhorse C-130 models, and seek out a combination of potentially cheaper technologies to support TSMC delivery. The *capability* to quickly supply troops in battle is more important than the platform.

Notes

¹ John T. Bennett, "Schwartz Not Afraid of Army Airlifters, UAVs," *Air Force Times*, February 13, 2009.

² A recent editorial by senior AF leadership explained that the constrained budget environment "...has increasingly become a zero-sum game." See Michael Donley and Norton Schwartz, "Moving Beyond the F-22," *Washington Post*, April 13, 2009, p. A15.

³ Rick Maze, "Schwartz Warns of Lost Guard Flight Missions," *Air Force Times*, September 23, 2008.

⁴ The IAFMA study concluded that C-130Js were more cost-effective but did acknowledge a need for the 78 planned C-27J aircraft.

⁵ Department of Defense, "DoD News Briefing With Secretary Gates From The Pentagon," press release, April 6, 2009, available at <http://www.defenselink.mil/transcripts/transcript.aspx?transcriptid=4396>.

⁶ Michelle Tan, "Army Hopes New Airdrop 'chute Delivers," *Air Force Times*, December 8, 2008, p. 32.

⁷ Jason Sherman, "Marines Launch Program to buy Cargo UAS Services for Afghanistan," *Inside Defense*, April 21, 2008.

Appendix A

JCA Program History

Small airlifters have filled numerous roles for DoD for several decades, flying missions to deliver time-sensitive cargo, transport important personnel, evacuate casualties, and resupply austere operating locations. During the Vietnam War, intra-theater airlift missions were shared by the services, with the Air Force using C-123 *Providers* while the Army used a small fleet of C-7 *Caribous*.¹ Ownership of the fixed-wing resupply mission, a continual source of inter-service tension, was temporarily settled with an agreement in 1966 to transfer ownership of the C-7s to the Air Force, who would operate the aircraft while attached to Army units.² After Vietnam, however, due to dwindling defense budgets the Air Force retired both the C-7 and C-123 without replacement.

In the 1980s, the Air Force procured a small fleet of C-23 *Sherpas* to move supplies between European bases. With the end of the Cold War, six *Sherpas* were transferred to the Army, who eventually acquired 40 more, assigning them primarily to Army National Guard units.³ In 1991, the Air Force purchased 10 C-27A *Spartans* for operations around Howard Air Force Base, Panama, but these aircraft were retired in 1999 after the base closed.⁴ Proponents of acquiring a new Army airlifter argued that operations in Iraq and Afghanistan stressed Army transport helicopters, amplified weaknesses of the aging *Sherpa* fleet the Army inherited, and exposed a

capability gap within DoD. A comparison of the C-27J (JCA) with current and former Army airlifters is shown in Table 2.

Table 2. Comparison of Army Fixed-Wing and Helicopter Transports

Aircraft	Entered Service	Army Inventory	Max Payload (lbs.)	Passengers	Range w/ Max Payload (NM)	Service Ceiling (ft.)	Speed (knots)
C-7	1959	—	8,740	32	210	24,800	188
C-23	1985	47	7,280	30	446	20,000	194
C-27J	—	—	18,739	46	1,160	30,000	315
CH-47D (helicopter)	1962	395	19,500	33-55	230	18,000	143

Sources: *Jane's All the World's Aircraft* 2009, Teal Group aircraft studies, U.S. Army Fact Files.

In 2004, the DoD began to consider options to meet this possible capability gap.⁵ The Army's Future Cargo Aircraft (FCA) program gained DoD approval in March 2005 with plans for an initial purchase of 33 aircraft. FCA was intended to replace aging C-23s, C-26 *Metroliners*, and some C-12 *Hurons*,⁶ reduce reliance on ground convoys in Iraq and Afghanistan, and decrease the heavy workload of the Army's CH-47 *Chinook* helicopters.⁷ A rift over FCA between the Army and Air Force began to surface in 2005. In September 2005, the Air Force expressed interest in developing a small intra-theater airlifter of its own—the Light Cargo Aircraft (LCA). By late 2005, Air Force officials envisioned purchasing a fleet of 100-150 LCAs.⁸

In December 2005, DoD noted the similarities between the FCA and LCA programs and merged them into the Joint Cargo Aircraft (JCA) program with the Army designated as lead. Then, in June 2006, the Army and Air Force Vice Chiefs of Staff signed an agreement to jointly develop command and control, sustainment, training, and acquisition strategies for the new JCA.⁹ Industry teams competed for the JCA contract; L-3 Communications, Alenia

Aeronautica, and Boeing offered the C-27J, Raytheon and European Aeronautic Defence and Space (EADS) Company proposed the C-295 and CN-235, and Lockheed Martin competed the C-130J.¹⁰

In November 2006, Lockheed Martin filed a protest after the C-130J was eliminated from competition for failing to meet required navigational capabilities. When the C-27J won the JCA competition in June 2007, Raytheon also contested DoD's evaluation of competing aircraft. The Government Accountability Office denied both protests,¹¹ and subsequently L-3 Communications was awarded a \$2.04 billion firm-fixed price contract to build up to 78 C-27Js, 54 for the Army and 24 for the Air Force.¹² The Army has already begun to take deliveries of the JCA, while the first Air Force aircraft is scheduled to be delivered in 2012.



Figure 1 First U.S. Army Joint Cargo Aircraft landing at Waco, Texas in August 2008

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¹ Charles E. Miller, *Airlift Doctrine* (Maxwell AFB, AL: AU Press, 1988), p. 311.

² Robert Frank Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1961-1984*, vol. II (Maxwell AFB, AL: AU Press, 1989), p. 313.

³ Jane's, *Aircraft Upgrades: Shorts C-23 Sherpa*, November 9, 2007.

⁴ Richard Aboulafia, *Alenia/Lockheed Martin G-222/C-27/JCA*, Teal Group, World Military and Civil Aircraft Briefing, July 2007.

⁵ Cynthia DiPasquale, "Airlift Mission Toss-up: Joint Staff Considers Air Force, Army Roles in Intratheater Airlift," *Inside the Air Force*, October 9, 2004.

⁶ As these aircraft are primarily passenger carriers, Army plans to replace C-26s and C-12s with the FCA were an attempt to transition to a more cargo-capable fixed-wing fleet.

⁷ Ashley Roque, "Army Seeking Information for Off-the-Shelf Future Cargo Aircraft," *Inside the Army*, April 25, 2005. In addition to relieving an overworked CH-47 fleet, the Army also required a fixed-wing aircraft for some high-altitude operations not achievable by helicopters.

⁸ John T. Bennett, "AFSOC Could Operate up to 40 Joint Cargo Aircraft Commander Says," *Inside the Air Force*, September 2, 2005.

⁹ Gen. Richard A. Cody (USA) and Gen. John W. Corley (USAF), Memorandum of Agreement, "Way Ahead for the Convergence of the Army Future Cargo Aircraft (FCA) and the Air Force Light Cargo Aircraft (LCA) Programs," June 20, 2006.

¹⁰ Martin Matishak, "AFMC Chief: Army, Air Force Reach Accord on Technical Data for JCA," *Inside the Army*, July 3, 2006.

¹¹ US Government Accountability Office, *Lockheed Martin Aeronautics Company Decision*, B-298626, November 21, 2006, available at <http://www.gao.gov/decisions/bidpro/298626.pdf>, and US Government Accountability Office, *Raytheon Company, Space and Airborne Systems Decision*, B-298626.2, B-298626.3, September 27, 2007, available at <http://www.gao.gov/decisions/bidpro/2986262.pdf>.

¹² Department of Defense, "Contracts," press release, June 13, 2007, available at <http://www.defenselink.mil/contracts/contract.aspx?contractid=3537>.

Glossary

AE	Aeromedical Evacuation
AFMC	Air Force Materiel Command
AFSOC	Air Force Special Operations Command
AMC	Air Mobility Command
ANG	Air National Guard
AU	Air University
BPC	Building Partnership Capacity
CRS	Congressional Research Service
CADRE	College of Aerospace Doctrine, Research and Education
CCAF	Community College of the Air Force
CONOPS	Concept of Operations
CSAF	United States Air Force Chief of Staff
DoD	Department of Defense
FCA	Future Cargo Aircraft
FEMA	Federal Emergency Management Agency
FMS	Foreign Military Sales
FY	Fiscal Year
GAO	Government Accountability Office
GPS	Global Positioning Satellite
HASC	House Armed Services Committee
HQ	Headquarters
IAFMA	Intra-theater Airlift Mix Analysis
IDA	Institute of Defense Analysis
ILA	Intra-theater Lift Analysis
JCA	Joint Cargo Aircraft
JFACC	Joint Forces Air Component Commander
JFC	Joint Force Commander
JFLCC	Joint Forces Land Component Commander
JITLCS	Joint Intra-theater Lift Capabilities Study

JITDA	Joint Intra-theater Distribution Analysis
JOA	Joint Operations Area
JPADS	Joint Precision Aerial Delivery System
JROC	Joint Requirements Oversight Council
LCA	Light Cargo Aircraft
MCRS	Mobility Capabilities Requirements Study
MCS	Mobility Capability Study
MOA	Memorandum of Agreement
MRS	Mobility Requirements Study
O&M	Operations and Maintenance
OSA	Operational Support Airlift
QDR	Quadrennial Defense Review
QRMR	Quadrennial Roles and Missions Review
RDT&E	Research, Development, Test & Evaluation
SASC	Senate Armed Services Committee
TACON	Tactical Control
TSMC	Time-sensitive/Mission Critical
UAS	Unmanned Aerial System
USA	United States Army
USAF	United States Air Force
USTRANSCOM	United States Transportation Command

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